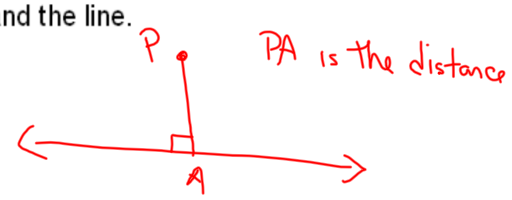
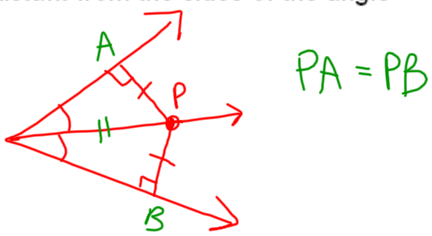
5.6 Angle Bisectors and Perpendicular Bisectors

Distance from a point to a line is measured by the length of the ⊥ segment between the point and the line.

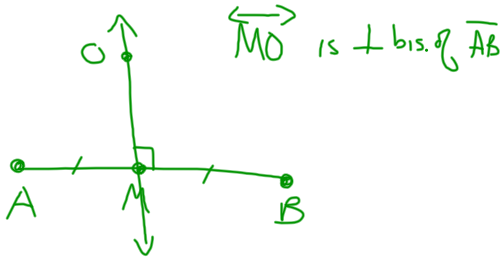


Equidistant—same distance

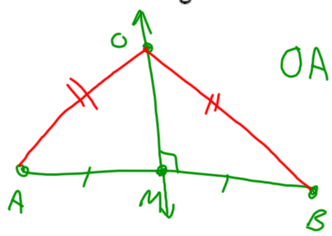
Theorem 5.3—Angle Bisector Theorem—if a point lies on the angle bisector, then it is equidistant from the sides of the angle



Perpendicular bisector—perpendicular to a segment at its midpoint

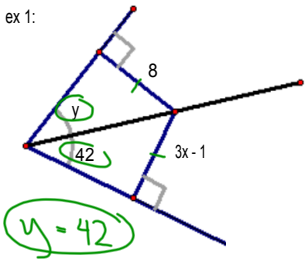


Theorem 5.4—Perpendicular Bisector Theorem—if a point is on the ⊥ bisector of a segment, then it is equidistant from the endpoints of the segment



OA = OB

ex 1:

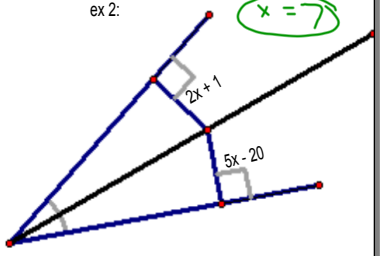


y = 42

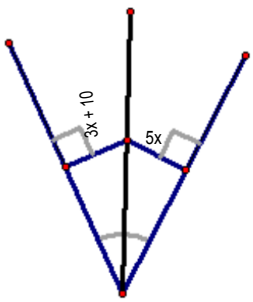
3x - 1 = 8
3x = 9
x = 3

$5x - 20 = 2x + 1$
$-2x \quad -2x$
$3x - 20 = 1$
$+20 \quad +20$
$3x = 21$
$x = 7$

ex 2:

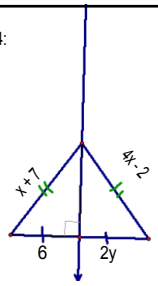


ex 3:



$5x = 3x + 10$
$-3x \quad -3x$
$2x = 10$
$x = 5$

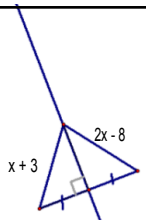
ex 4:



$x + 7 = 4x - 2$
$-4x \quad -4x$
$-3x + 7 = -2$
$-7 \quad -7$
$-3x = -9$
$x = 3$

$2y = 6$
$y = 3$

ex 5:



$x + 3 = 2x - 8$

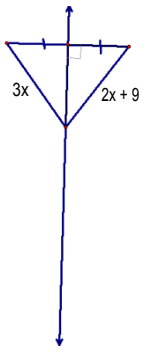
$-x \quad -x$

$3 = x - 8$

$11 = x$

$x = 9$

ex 6:



Homework
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